



Climate variability and Ross River virus infections in Riverland, South Australia, 1992-2004

Author(s): Bi P, Hiller JE, Cameron AS, Zhang Y, Givney R
Year: 2009
Journal: Epidemiology and Infection. 137 (10): 1486-1493

Abstract:

Ross River virus (RRV) infection is the most common notifiable vector-borne disease in Australia, with around 6000 cases annually. This study aimed to examine the relationship between climate variability and notified RRV infections in the Riverland region of South Australia in order to set up an early warning system for the disease in temperate-climate regions. Notified data of RRV infections were collected by the South Australian Department of Health. Climatic variables and monthly river flow were provided by the Australian Bureau of Meteorology and South Australian Department of Water, Land and Biodiversity Conservation over the period 1992-2004. Spearman correlation and time-series-adjusted Poisson regression analysis were performed. The results indicate that increases in monthly mean minimum and maximum temperatures, monthly total rainfall, monthly mean Southern Oscillation Index and monthly flow in the Murray River increase the likelihood, but an increase in monthly mean relative humidity decreases the likelihood, of disease transmission in the region, with different time-lag effects. This study demonstrates that a useful early warning system can be developed for local regions based on the statistical analysis of readily available climate data. These early warning systems can be utilized by local public health authorities to develop disease prevention and control activities.

Source: <http://dx.doi.org/10.1017/s0950268809002441>

Resource Description

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

El Nino Southern Oscillation, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Climate Change and Human Health Literature Portal

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Australasia

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Ross River Virus

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Outcome Change Prediction

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Short-Term (

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content